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PREVENTION OF AIR POLLUTION FROM SHIPS

Consideration of the Energy Efficiency Design Index (EEDI) for cruise ships

Submitted by Cruise Lines International Association (CLIA)

SUMMARY

Executive summary:	This document responds to the request to submit comments and further proposals to the next session (MEPC 59/24, paragraph 4.137) and provides an update on the activity of CLIA in this regard
Strategic direction:	7.3
High-level action:	7.3.1
Planned output:	7.3.1.3
Action to be taken:	Paragraph 11
Related documents:	MEPC.1/Circ.681, MEPC.1/Circ.682; MEPC 59/4/28, MEPC 59/24, MEPC 60/4 and MEPC 60/4/2

Background

1 This document is submitted in accordance with provisions of paragraph 4.10.5 of the Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies (MSC-MEPC.1/Circ.2) and comments on documents MEPC 60/4 and MEPC 60/4/2. This document also provides additional information as a response to paragraph 4.137 of document MEPC 59/24.

2 The Committee may recall that IMO agreed that values for a ship's normal sea-going electrical load may be used in the calculation for the ship's EEDI for the P_{AE} component of the formula as an alternative to the fixed percentage of main engine power factor presently included. This possibility may be used to the advantage in many ship power plant configurations and will be necessary, in particular, where the main propulsion is electrically driven and, for example, in passenger ships where the passenger accommodation's electric power demands at sea form a substantial part of the total generated power.

Summary

3 CLIA acknowledges item 6.27 of the report of the working group on GHG emissions at MEPC 59 (document MEPC 59/WP.8), where the proposal of Sweden in favour of a consistent and validated establishment of baselines instead of the use of the Lloyds' Register Fairplay's database was indicated.

4 CLIA further investigated this matter and found that:

.1 the Lloyd's Register Fairplay's database is not publicly available; therefore, CLIA couldn't gain access to it and investigate its nature and the information included within;

.2 the data indicated in the Lloyd's Register Fairplay's database may not be sufficient for the calculation of the EEDI value (e.g., the "Weighted averaged of the generator/s" may not be available, etc.);

.3 the total number of passenger ships built in the last ten years is relatively small; consequently, uncertainties are likely to have a negative influence on the baseline regression accuracy. Therefore, the calculation of the baseline for passenger ships must use accurate and consistent data;

.4 according to the Chairman's summary of the working group at MEPC 59 (paragraph 6.32 of document MEPC 59/WP.8), there are some documents relevant to the baseline. One specific document (MEPC 58/4/8) submitted by Denmark, indicates the values "a" and "c" for passenger vessels and ro-ro passenger ships. These values are outdated by the current formulation of the EEDI;

.5 consequently, it appears that it is not possible to comment on the passenger ship baseline's validity by comparing it with individual EEDI points. CLIA notes that this approach, however, has been often used by a number of members commenting on other ship type baselines; and

.6 review of documents during the design stage:

.1 check if all relevant loads are listed in the EPT;

.2 check if reasonable service factors are used;

.3 check the correctness of the P_{AE} calculation; and

.4 it is assumed at this stage that the data being provided by the participating shipyards is accurate and represents their experience in estimating the loads as the design process continues to the "as built" ship.

Considerations

5 The EEDI calculation requires a number of data that will be required to be available onwards before the EEDI framework can be adopted at IMO:

.1 the verification process of major data (e.g., P_{ME}, SFC, V_{ref}, P_{PTI}, P_{AEeff}, P_{eff}, Capacity, etc.) has been investigated by the IACS submission MEPC 59/4/27; and

.2 the validation of P_{AE} has been investigated by document MEPC 60/4/2 (IACS).

6 Consequently, it will be possible to draw a baseline for new conventional passenger ships. **Also**, the verification and validation processes will be possible subsequent to the adoption of the EEDI framework at IMO.

7 CLIA is of the view that the most reliable databases available are for ten-year-old ships and the Lloyd's Register Fairplay's database fails to provide the information necessary to calculate EEDI for existing ships. As a result, the Verification/Validation approach should be applied to draw the first baseline (i.e. the "10 years old ships" baseline) instead of using the Lloyd's Register Fairplay's database.

CLIA's progress on the baselines for conventional passenger ships

8 CLIA tasked the CSSF (Cruise Safety Forum, which links shipyards, classification societies and shipowners dealing with safety and regulation affairs for cruise passenger ships) to work on the baselines for cruise passenger ships.

9 The baseline calculation is ongoing but has not been finalized in time for a formal submission to MEPC 60. Findings could be available for reporting during the meeting.

10 Organization of CLIA activity:

.1 shipyards are to retrieve the necessary data;

.2 shipyards are to calculate the EEDI for the cruise passenger ships delivered over the last 10 years;

.3 shipyards send the data to a classification society with a non-disclosure agreement in order to protect the IP (Intellectual Property) on sensitive data. The data has to include at least:

.1 EEDI gross calculation;

.2 documentation as necessary for the validation;

.3 propulsion power curve at the sea trials;

.4 Electric Power table;

.5 propulsion motor power and certificates;

.6 certificates of the electric generators;

.7 engine's data, including SFC; and

.8 etc. [to be completed];

.4 the classification society will validate the shipyards' EEDI gross data by doing a re-calculation. This will lead to a consistency check in order to verify that all the shipyards have adopted the right criteria for the EEDI calculation;

.5 the classification society will calculate the baseline and will publicize the values of "a" and "c" without disclosing the individual EEDI point ship names, which belong to the shipyards, thus protecting the IP of the sensitive data; and

.6 the classification society will offer considerations regarding the scattering of the baseline and report regarding its feasibility for the cruise passenger ships.

Action requested of the Committee

11 The Committee is invited to consider this information and take action as appropriate.